REMARKS

Claims 1 and 21 have been amended. Support for the amended subject matter can be found in the specification at least at page 8, line 8 et seq. and at pages 53-69. No new matter has been added and entry is respectfully requested. Claims 2, 4, 5 and 11 were previously canceled. After entry of the above amendments, Claims 1, 3, 6-10 and 12-21 are pending. Claims 15-20 have been withdrawn.

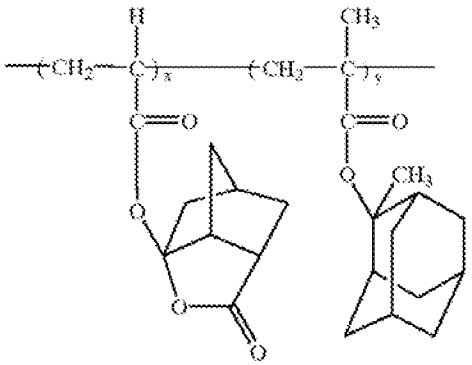
Claims 6-8, 12, 14 and 21 have been rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite. Claim 21 has been amended to recite the "radiation-sensitive resin composition of Claim 1" in the claim preamble. It is respectfully submitted that the amendment to Claim 21 has obviated the rejection of these claims. Reconsideration and withdrawal of the above rejection is therefore respectfully requested.

Claims 1, 3, 6-10 and 13 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent Publication No. 2001/0036901 A1 to Maeda et al. (hereinafter "Maeda"). Claims 6, 8 and 21 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Maeda in view of International Publication No. WO 96/30421 to Matyjaszewski et al. (hereinafter "Matyjaszewski"). Claims 7, 12 and 21 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Maeda in view of Matyjaszewski and further in view of International Publication No. WO 98/01478 to Le et al. (hereinafter "Le"). Claims 7, 12 and 21 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Maeda in view of Matyjaszewski and further in view of Gennady et al., J. Polym. Sci.: Part A: Polymer

Chemistry, Vol. 39, pp. 3604-3621 (2001) (hereinafter "Gennady"). Each of the above rejections is respectfully traversed.

Each of the above-rejections is relying upon the disclosure in Maeda of a polymer of the general formula (2) as set forth on pg. 2, numbered paragraph [0015] of Maeda (pages 3-4 of the Official Action). Formula (2) of Maeda, however, is a general formula that covers a wide range of polymers. Claim 1 is directed to a composition comprising a polymer having a recurring unit of formula (1) and at least one recurring unit selected from the group consisting of the recurring units of the formulas (2)-(7), *wherein the resin comprises at least three different recurring units of the formulas (1)-(7)*. In addition, the recurring units of the formulae (2)-(7) are methacrylate comonomers having a specific structure. The Official Action has pointed to no teaching or suggestion in Maeda or in any other cited reference which would teach or reasonably suggest the radiation sensitive resin composition of Claim 1.

The Official Action is relying upon the disclosure in Example 10 of Maeda (page 4 of the Official Action). Example 10 of Maeda discloses a polymer having the following structure:

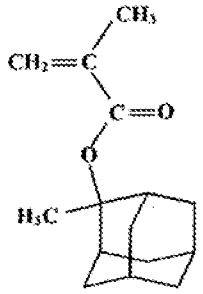


wherein x=0.7 and y=0.3 (page 9, numbered paragraph [0068] of Maeda). First, this polymer does not comprises at least three different recurring units of the formulas (1)-(7) as set forth in Claim 1. In fact, the Official Action has pointed to no teaching or suggestion in Maeda of a polymer meeting the structural definition of Claim 1. In addition, the polymer of Example 10 of Maeda has a Mw/Mn value of 1.96 (page 9, numbered paragraph [0069] of Maeda). This polydispersity value is well outside the range recited in Claim 1 (i.e., less than 1.5). In the Official Action, it is stated that "[t]he polymer has a ratio of weight average molecular weight to number average molecular weight of 1.45, 1.4 and 1.5, respectively." The Official Action appears to be referring to the Mw/Mn values of polymers disclosed in other examples in Maeda (i.e., Examples 18, 24 and 25). The polymers in Examples 18, 24 and 25 of Maeda, however, also do not meet the structural definition of Claim 1. Accordingly, the Official Action has pointed to no teaching or suggestion in Maeda of a polymer meeting the structural definition of Claim 1, much less such a polymer having a polydispersity value as set forth in Claim 1.

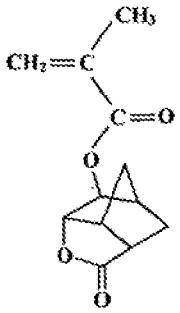
The other references cited in the Official Action do not remedy the above-noted deficiencies of Maeda. In particular, these references were being relied upon in the Official Action to address limitations appearing in the dependent claims. In view of the above, it is respectfully submitted that Claim 1 is patentable over the cited references.

Claims 3, 6-10, 12-14 and 21 depend either directly or indirectly from Claim 1 and are therefore also patentable over the cited references for at least the reasons set forth above with respect to Claim 1. In view of the above, reconsideration and withdrawal of the above rejections is therefore respectfully requested.

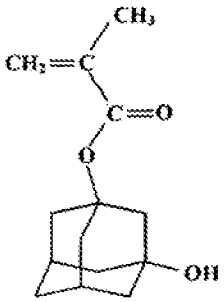
In addition, there is objective evidence of non-obviousness which is present in the specification which further distinguishes the claimed invention from the cited references. In particular, in Example 8 and Comparative Example 1 of the specification, two polymers were polymerized from the same comonomer units using different polymerization initiators. These comonomer units are set forth below:



(S1-8)



(S2-8)



(S3-8)

The polymers of Example 8 and Comparative Example 1 of the specification therefore each comprise a recurring unit of the formula (1) of Claim 1, a recurring unit of the formula (2) of Claim 1 and a recurring unit of the formula (3) of Claim 1.

In Example 8, the comonomers were polymerized using a living-radical polymerization initiator and had a polydispersity value of 1.44 (page 53 of the Specification). In Comparative Example 1, the same comonomers were polymerized using AIBN and had a polydispersity value of 2.2 (pg. 74 of the Specification). The polymer disclosed in Example 10 of Maeda, which is being relied upon in the Official Action, is also polymerized using AIBN and has a polydispersity value of 1.96 which is outside of the claimed range. Resists formulated using these two different copolymers were evaluated. The resist formulated using the Example 8 copolymer was found to have significantly better line edge roughness (LER) values than the resist formulated using the

Comparative Example 1 copolymer while maintaining high sensitivity. These results are summarized in the table below:

Example	Sensitivity (J/m2)	LER (nm)
Example 8	24	5.7
Comparative Example 1	26	6.7

As can be seen from the above data, compositions as set forth in Claim 1 exhibited a significant reduction in line edge roughness (LER) compared to similar compositions outside of the scope of Claim 1. Since this evidence appears in the specification, this evidence must be considered. Moreover, as set forth in the MPEP, "[e]xaminers must consider comparative data in the specification which is intended to illustrate the claimed invention in reaching a conclusion with regard to the obviousness of the claims" {MPEP § 706.01(a)}. It is respectfully submitted that this evidence appearing in the specification further distinguishes the claimed invention from the cited references.

CONCLUSION

In view of the above amendments and remarks, Applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

MORRIS, MANNING & MARTIN, LLP

January 22, 2010
Date

/Christopher W. Raimund/
Christopher W. Raimund
Registration No. 47,258

1333 H Street, N.W., Suite 820
Washington, D.C. 20005
Telephone No. (202) 408-5153
Facsimile No. (202) 408-5146